OIPE

ENTERED

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/058,945

DATE: 02/19/2002
TIME: 11:02:15

Input Set : A:\215482US0X.txt
Output Set: N:\CRF3\02192002\J058945.raw

```
 3 <110> APPLICANT: HERMANN, Thomas
 4         WOLF, Andreas
 5         MORBACH, Susanne
 6         KRAMER, Reinhard
 8 <120> TITLE OF INVENTION: NUCLEOTIDE SEQUENCES CODING FOR THE OtsA PROTEIN
10 <130> FILE REFERENCE: 215482US0X
C--> 12 <140> CURRENT APPLICATION NUMBER: US/10/058,945
C--> 12 <141> CURRENT FILING DATE: 2002-01-30
12 <150> PRIOR APPLICATION NUMBER: DE 10103873.9
13 <151> PRIOR FILING DATE: 2001-01-30
15 <150> PRIOR APPLICATION NUMBER: DE 10110760.9
16 <151> PRIOR FILING DATE: 2000-03-07
18 <160> NUMBER OF SEQ ID NOS: 4
20 <170> SOFTWARE: PatentIn version 3.1
22 <210> SEQ ID NO: 1
23 <211> LENGTH: 3010
24 <212> TYPE: DNA
25 <213> ORGANISM: Corynebacterium glutamicum
27 <220> FEATURE:
28 <221> NAME/KEY: CDS
29 <222> LOCATION: (884)..(2338)
30 <223> OTHER INFORMATION:
33 <400> SEQUENCE: 1
34 attgcggggc ttactgcgct gatgggttct gcgttttatt acctcttcgt tgtttatttta    60
36 ggccccgtct ctgccgctgc gattgctgca acagcagttg gtttcactgg tggtttgctt   120
38 gcccgtcgat tcttgattcc accgttgatt gtggcgattg ccggcatcac accaatgctt   180
40 ccaggtctag caatttaccg cggaatgtac gccaccctga atgatcaaac actcatgggt   240
42 ttcaccaaca ttgcggttgc tttagccact gcttcatcac ttgccgctgg cgtggttttg   300
44 ggtgagtgga ttgcccgcag gctacgtcgt ccaccacgct tcaacccata ccgtgcattt   360
46 accaaggcga atgagttctc cttccaggag gaagctgagc agaatcagcg ccggcagaga   420
48 aaacgtccaa agactaatca gagattcggt aataaaggt aaaaatcaac ctgcttaggc   480
50 gtctttcgct taaatagcgt agaatatcgg gtcgatcgct tttaaacact caggaggatc   540
52 cttgccggcc aaaatcacgg acactcgtcc caccccagaa tcccttcacg ctgttgaaga   600
54 ggaaaccgca gccggtgccc gcaggattgt tgccacctat tctaaggact tcttcgacgg   660
56 cgtcactttg atgtgcatgc tcggcgttga acctcagggc ctgcgttaca ccaaggtcgc   720
58 ttctgaacac gaggaagctc agccaaagaa ggctacaaag cggactcgta aggcaccagc   780
60 taagaaggct gctgctaaga aaacgaccaa gaagaccact aagaaaacta ctaaaaagac   840
62 caccgcaaag aagaccacaa agaagtctta agccggatct tat atg gat gat tcc   895
63                                                     Met Asp Asp Ser
64                                                       1
66 aat agc ttt gta gtt gtt gct aac cgt ctg cca gtg gat atg act gtc   943
67 Asn Ser Phe Val Val Val Ala Asn Arg Leu Pro Val Asp Met Thr Val
68 5                   10                  15                  20
```

RAW SEQUENCE LISTING   DATE: 02/19/2002
PATENT APPLICATION: US/10/058,945   TIME: 11:02:15

```
        Input Set : A:\215482US0X.txt
        Output Set: N:\CRF3\02192002\J058945.raw

70 cac cca gat ggt agc tat agc atc tcc ccc agc ccc ggt ggc ctt gtc    991
71 His Pro Asp Gly Ser Tyr Ser Ile Ser Pro Ser Pro Gly Gly Leu Val
72             25                  30                  35
74 acg ggg ctt tcc ccc gtt ctg gaa caa cat cgt gga tgt tgg gtc gga   1039
75 Thr Gly Leu Ser Pro Val Leu Glu Gln His Arg Gly Cys Trp Val Gly
76             40                  45                  50
78 tgg cct gga act gta gat gtt gca ccc gaa cca ttt cga aca gat acg   1087
79 Trp Pro Gly Thr Val Asp Val Ala Pro Glu Pro Phe Arg Thr Asp Thr
80             55                  60                  65
82 ggt gtt ttg ctg cac cct gtt gtc ctc act gca agt gac tat gaa ggc   1135
83 Gly Val Leu Leu His Pro Val Val Leu Thr Ala Ser Asp Tyr Glu Gly
84        70                  75                  80
86 ttc tac gag ggc ttt tca aac gca acg ctg tgg cct ctt ttc cac gat   1183
87 Phe Tyr Glu Gly Phe Ser Asn Ala Thr Leu Trp Pro Leu Phe His Asp
88 85                  90                  95                 100
90 ctg att gtt act ccg gtg tac aac acc gat tgg tgg cat gcg ttt cgg   1231
91 Leu Ile Val Thr Pro Val Tyr Asn Thr Asp Trp Trp His Ala Phe Arg
92                 105                 110                 115
94 gag gta aac ctc aag ttc gct gaa gcc gtg agc caa gtg gcg gca cac   1279
95 Glu Val Asn Leu Lys Phe Ala Glu Ala Val Ser Gln Val Ala Ala His
96             120                 125                 130
98 ggt gcc act gtg tgg gtg cag gac tat cag ctg ttg ctg gtt cct ggc   1327
99 Gly Ala Thr Val Trp Val Gln Asp Tyr Gln Leu Leu Leu Val Pro Gly
100            135                 140                 145
102 att ttg cgc cag atg cgc cct gat ttg aag atc ggt ttc ttc ctc cac  1375
103 Ile Leu Arg Gln Met Arg Pro Asp Leu Lys Ile Gly Phe Phe Leu His
104            150                 155                 160
106 att ccc ttc cct tcc cct gat ctg ttc cgt cag ctg ccg tgg cgt gaa  1423
107 Ile Pro Phe Pro Ser Pro Asp Leu Phe Arg Gln Leu Pro Trp Arg Glu
108 165                 170                 175                 180
110 gag att gtt cga ggc atg ctg ggc gca gat ttg gtg gga ttc cat ttg  1471
111 Glu Ile Val Arg Gly Met Leu Gly Ala Asp Leu Val Gly Phe His Leu
112                 185                 190                 195
114 gtt caa aac gca gaa aac ttc ctt gcg tta acc cag cag gtt gcc ggc  1519
115 Val Gln Asn Ala Glu Asn Phe Leu Ala Leu Thr Gln Gln Val Ala Gly
116            200                 205                 210
118 act gcc ggg tct cat gtg ggt cag ccg gac acc ttg cag gtc agt ggt  1567
119 Thr Ala Gly Ser His Val Gly Gln Pro Asp Thr Leu Gln Val Ser Gly
120            215                 220                 225
122 gaa gca ttg gtg cgt gag att ggc gct cat gtt gaa acc gct gac gga  1615
123 Glu Ala Leu Val Arg Glu Ile Gly Ala His Val Glu Thr Ala Asp Gly
124        230                 235                 240
126 agg cga gtt agc gtc ggg gcg ttc ccg atc tcg att gat gtt gaa atg  1663
127 Arg Arg Val Ser Val Gly Ala Phe Pro Ile Ser Ile Asp Val Glu Met
128 245                 250                 255                 260
130 ttt ggg gag gcg tcg aaa agc gcc gtt ctt gat ctt tta aaa acg ctc  1711
131 Phe Gly Glu Ala Ser Lys Ser Ala Val Leu Asp Leu Leu Lys Thr Leu
132            265                 270                 275
134 gac gag ccg gaa acc gta ttc ctg ggc gtt gac cga ctg gac tac acc  1759
```

```
135 Asp Glu Pro Glu Thr Val Phe Leu Gly Val Asp Arg Leu Asp Tyr Thr
136         280             285             290
138 aag ggc att ttg cag cgc ctg ctt gcg ttt gag gaa ctg ctg gaa tcc      1807
139 Lys Gly Ile Leu Gln Arg Leu Leu Ala Phe Glu Glu Leu Leu Glu Ser
140         295             300             305
142 ggc gcg ttg gag gcc gac aaa gct gtg ttg ctg cag gtc gcg acg cct      1855
143 Gly Ala Leu Glu Ala Asp Lys Ala Val Leu Leu Gln Val Ala Thr Pro
144         310             315             320
146 tcg cgt gag cgc att gat cac tat cgt gtg tcg cgt tcg cag gtc gag      1903
147 Ser Arg Glu Arg Ile Asp His Tyr Arg Val Ser Arg Ser Gln Val Glu
148 325             330             335             340
150 gaa gcc gtc ggc cgt atc aat ggt cgt ttc ggt cgc atg ggg cgt ccc      1951
151 Glu Ala Val Gly Arg Ile Asn Gly Arg Phe Gly Arg Met Gly Arg Pro
152         345             350             355
154 gtg gtg cat tat cta cac agg tca ttg agc aaa aat gat ctc cag gtg      1999
155 Val Val His Tyr Leu His Arg Ser Leu Ser Lys Asn Asp Leu Gln Val
156         360             365             370
158 ctg tat acc gca gcc gat gtc atg ctg gtt acg cct ttt aaa gac ggt      2047
159 Leu Tyr Thr Ala Ala Asp Val Met Leu Val Thr Pro Phe Lys Asp Gly
160         375             380             385
162 atg aac ttg gtg gct aaa gaa ttc gtg gcc aac cac cgc gac ggc act      2095
163 Met Asn Leu Val Ala Lys Glu Phe Val Ala Asn His Arg Asp Gly Thr
164         390             395             400
166 ggt gct ttg gtg ctg tcc gaa ttt gcc ggc gcg gcc act gag ctg acc      2143
167 Gly Ala Leu Val Leu Ser Glu Phe Ala Gly Ala Ala Thr Glu Leu Thr
168 405             410             415             420
170 ggt gcg tat tta tgc aac cca ttt gat gtg gaa tcc atc aaa cgg caa      2191
171 Gly Ala Tyr Leu Cys Asn Pro Phe Asp Val Glu Ser Ile Lys Arg Gln
172         425             430             435
174 atg gtg gca gct gtc cat gat ttg aag cac aat ccg gaa tct gcg gca      2239
175 Met Val Ala Ala Val His Asp Leu Lys His Asn Pro Glu Ser Ala Ala
176         440             445             450
178 acg cga atg aaa acg aac agc gag cag gtc tat acc cac gac gtc aac      2287
179 Thr Arg Met Lys Thr Asn Ser Glu Gln Val Tyr Thr His Asp Val Asn
180         455             460             465
182 gtg tgg gct aat agt ttc ctg gat tgt ttg gca cag tcg gga gaa aac      2335
183 Val Trp Ala Asn Ser Phe Leu Asp Cys Leu Ala Gln Ser Gly Glu Asn
184         470             475             480
186 tca tgaaccgcgc acgaatcgcg accataggcg ttcttccgct tgctttactg      2388
187 Ser
188 485
190 ctggcgtcct gtggttcaga caccgtggaa atgacagatt ccacctggtt ggtgaccaat      2448
192 atttacaccg atccagatga gtcgaattcg atcagtaatc ttgtcatttc ccagcccagc      2508
194 ttagattttg gcaattcttc cctgtctggt ttcactggct gtgtgccttt tacggggcgt      2568
196 gcggaattct tccaaaatgg tgagcaaagc tctgttctgg atgccgatta tgtgaccttg      2628
198 tcttccctgg atttcgataa acttcccgat gattgccaag acaagaact  caaagttcat      2688
200 aacgagctgg ttgatcttct gcctggttct tttgaaatct ccaggacttc tggttcagaa      2748
202 atcttgctga ctagcgatgt cgatgaactc gatcggccag caatccgctt ggtgtcctgg      2808
204 atcgcgccga catcttaagg tgccagggct ttaaagtgcc aggggttctg tgggatccgt      2868
```

RAW SEQUENCE LISTING   DATE: 02/19/2002
PATENT APPLICATION: US/10/058,945   TIME: 11:02:15

Input Set : A:\215482US0X.txt
Output Set: N:\CRF3\02192002\J058945.raw

```
206 acactggttc ccatgacttt gactattgag gaaatcgcca agaccaaaaa gcttttggtt   2928
208 gtgtccgatt ttgatggaac catcgcagga tttagcaagg acgcttacaa cgttcctatc   2988
210 aaccagaaat ccctcaaggc gg                                           3010
213 <210> SEQ ID NO: 2
214 <211> LENGTH: 485
215 <212> TYPE: PRT
216 <213> ORGANISM: Corynebacterium glutamicum
218 <400> SEQUENCE: 2
220 Met Asp Asp Ser Asn Ser Phe Val Val Val Ala Asn Arg Leu Pro Val
221 1               5                   10                  15
224 Asp Met Thr Val His Pro Asp Gly Ser Tyr Ser Ile Ser Pro Ser Pro
225             20                  25                  30
228 Gly Gly Leu Val Thr Gly Leu Ser Pro Val Leu Glu Gln His Arg Gly
229             35                  40                  45
232 Cys Trp Val Gly Trp Pro Gly Thr Val Asp Val Ala Pro Glu Pro Phe
233         50                  55                  60
236 Arg Thr Asp Thr Gly Val Leu Leu His Pro Val Val Leu Thr Ala Ser
237 65                  70                  75                  80
240 Asp Tyr Glu Gly Phe Tyr Glu Gly Phe Ser Asn Ala Thr Leu Trp Pro
241             85                  90                  95
244 Leu Phe His Asp Leu Ile Val Thr Pro Val Tyr Asn Thr Asp Trp Trp
245             100                 105                 110
248 His Ala Phe Arg Glu Val Asn Leu Lys Phe Ala Glu Ala Val Ser Gln
249             115                 120                 125
252 Val Ala Ala His Gly Ala Thr Val Trp Val Gln Asp Tyr Gln Leu Leu
253         130                 135                 140
256 Leu Val Pro Gly Ile Leu Arg Gln Met Arg Pro Asp Leu Lys Ile Gly
257 145                 150                 155                 160
260 Phe Phe Leu His Ile Pro Phe Pro Ser Pro Asp Leu Phe Arg Gln Leu
261             165                 170                 175
264 Pro Trp Arg Glu Glu Ile Val Arg Gly Met Leu Gly Ala Asp Leu Val
265             180                 185                 190
268 Gly Phe His Leu Val Gln Asn Ala Glu Asn Phe Leu Ala Leu Thr Gln
269             195                 200                 205
272 Gln Val Ala Gly Thr Ala Gly Ser His Val Gly Gln Pro Asp Thr Leu
273         210                 215                 220
276 Gln Val Ser Gly Glu Ala Leu Val Arg Glu Ile Gly Ala His Val Glu
277 225                 230                 235                 240
280 Thr Ala Asp Gly Arg Arg Val Ser Val Gly Ala Phe Pro Ile Ser Ile
281             245                 250                 255
284 Asp Val Glu Met Phe Gly Glu Ala Ser Lys Ser Ala Val Leu Asp Leu
285             260                 265                 270
288 Leu Lys Thr Leu Asp Glu Pro Glu Thr Val Phe Leu Gly Val Asp Arg
289             275                 280                 285
292 Leu Asp Tyr Thr Lys Gly Ile Leu Gln Arg Leu Leu Ala Phe Glu Glu
293         290                 295                 300
296 Leu Leu Glu Ser Gly Ala Leu Glu Ala Asp Lys Ala Val Leu Leu Gln
297 305                 310                 315                 320
300 Val Ala Thr Pro Ser Arg Glu Arg Ile Asp His Tyr Arg Val Ser Arg
```

RAW SEQUENCE LISTING   DATE: 02/19/2002
PATENT APPLICATION: US/10/058,945   TIME: 11:02:15

Input Set : **A:\215482US0X.txt**
Output Set: **N:\CRF3\02192002\J058945.raw**

```
301                    325             330             335
304 Ser Gln Val Glu Glu Ala Val Gly Arg Ile Asn Gly Arg Phe Gly Arg
305                    340             345             350
308 Met Gly Arg Pro Val Val His Tyr Leu His Arg Ser Leu Ser Lys Asn
309             355             360             365
312 Asp Leu Gln Val Leu Tyr Thr Ala Ala Asp Val Met Leu Val Thr Pro
313         370             375             380
316 Phe Lys Asp Gly Met Asn Leu Val Ala Lys Glu Phe Val Ala Asn His
317 385                390             395             400
320 Arg Asp Gly Thr Gly Ala Leu Val Leu Ser Glu Phe Ala Gly Ala Ala
321                405             410             415
324 Thr Glu Leu Thr Gly Ala Tyr Leu Cys Asn Pro Phe Asp Val Glu Ser
325             420             425             430
328 Ile Lys Arg Gln Met Val Ala Ala Val His Asp Leu Lys His Asn Pro
329         435             440             445
332 Glu Ser Ala Ala Thr Arg Met Lys Thr Asn Ser Glu Gln Val Tyr Thr
333     450             455             460
336 His Asp Val Asn Val Trp Ala Asn Ser Phe Leu Asp Cys Leu Ala Gln
337 465                470             475             480
340 Ser Gly Glu Asn Ser
341             485
344 <210> SEQ ID NO: 3
345 <211> LENGTH: 24
346 <212> TYPE: DNA
347 <213> ORGANISM: Corynebacterium glutamicum
349 <400> SEQUENCE: 3
350 cacctattct aaggacttct tcga                                        24
353 <210> SEQ ID NO: 4
354 <211> LENGTH: 22
355 <212> TYPE: DNA
356 <213> ORGANISM: Corynebacterium glutamicum
358 <400> SEQUENCE: 4
359 accaaccagg tggaatctgt ca                                          22
```

VERIFICATION SUMMARY   DATE: 02/19/2002
PATENT APPLICATION: US/10/058,945   TIME: 11:02:16

Input Set : A:\215482US0X.txt
Output Set: N:\CRF3\02192002\J058945.raw

L:12 M:270 C: Current Application Number differs, Replaced Current Application No
L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date